

Translation

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PCT/EP2003/005098

PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

522,702

Applicant's or agent's file reference P 2845/PCT B/S	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/005098	International filing date (day/month/year) 15 May 2003 (15.05.2003)	Priority date (day/month/year) 30 July 2002 (30.07.2002)
International Patent Classification (IPC) or national classification and IPC F16H 57/02, 1/14		
Applicant WITTENSTEIN AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>8</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>9</u> sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 11 February 2004 (11.02.2004)	Date of completion of this report 16 November 2004 (16.11.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

Form PCT/IPEA/409 (cover sheet) (July 1998)

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/005098

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages _____ 1, 3-7, 9-12 _____, as originally filed
 pages _____, filed with the demand
 pages _____ 2, 2a / 8 _____, filed with the letter of _____ 05.07.2004 / 18.10.2001
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____ 1-12 _____, filed with the letter of _____ 18 October 2001 (18.10.2001)
- ☒ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____ 1/3-3/3 _____, filed with the letter of _____ 18 October 2001 (18.10.2001)
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/005098

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☐ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
☒ the parts relating to claims Nos. 1, 4-12

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1, 4-12	YES
	Claims		NO
Inventive step (IS)	Claims	1, 4-12	YES
	Claims		NO
Industrial applicability (IA)	Claims	1, 4-12	YES
	Claims		NO

2. Citations and explanations

This report makes reference to the following documents:

D1: XP000385065

D2: DE 199 57 743 A

1. Unity of invention

It has been determined that this international application contains multiple inventions or groups of inventions which are not linked by a single general inventive concept (PCT Rule 13.1), as follows:

I. a machine element is mounted upstream of the hypoid stage of the bevel gear (claim 1 and its dependent claims);

II. drive shaft design in which additional drive elements can be adapted (claim 2 and its dependent claims);

III. separate lubricant compartments in the bevel gear (claim 3 and its dependent claims).

The reasons for this are as follows:

It is immediately clear from the aforementioned list that inventions I to III solve different problems. Unity of invention is therefore not recognized "*a priori*".

Furthermore, the general concept linking independent claims 1 to 3 could clearly be that a bevel gear, in particular a hypoid gear, has a driven shaft mounted in a housing, to which driven shaft a bevel gear wheel is allocated, this bevel gear wheel cooperating with a bevel drive pinion.

However, this concept is not novel (see, for example, D2, figure 2).

Thus there is no technical relationship within the meaning of PCT Rule 13 among claims 1 to 3, also "*a posteriori*".

The requirement of unity of invention is therefore not met and only the first invention (claim 1 and its dependent claims, claims 4-12) will be discussed in the following (PCT Article 34(3)(c)).

2. Novelty of the new independent claim 1

D2, which is regarded as the closest prior art, shows and describes a (the references in parentheses are to D2)

bevel gear (1), in particular a hypoid gear, having a driven shaft (27) mounted in a housing, to which driven shaft a bevel gear wheel (29) is allocated, this bevel gear wheel cooperating with a bevel drive pinion (35) (column 3, lines 59-60).

Thus the subject matter of claim 1 differs from the known bevel gear in that, connected upstream of a hypoid stage

in a modularly insertable manner, there is a differently dimensioned single- or multi-stage gear, wherein the drive pinion rests on the single- or multi-stage gear and the bevel gear wheel engages the drive shaft.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

3. Inventive step of independent claim 1

The problem to be solved by the present invention can therefore be regarded as that of further developing a bevel gear wheel according to the preamble of the independent claim in such a way that a flexible and customer-specific gear design is achieved in a simple and cost-effective way using standard components.

The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) because the combination of features in claim 1 appears to be neither known nor obvious from the available prior art.

4. Industrial applicability

The subject matter of claim 1 also appears to meet the requirements of PCT Article 33(4) because it can be made and used at least in the field of gear technology.

5. Dependent claims

Dependent claims 4 to 12, which relate to further embodiments of the invention according to claim 1, also appear to meet the requirements of PCT Article 33(2) to (4).

6. Observations

- The preamble of claim 1 discloses an optional feature, namely a hypoid gear; in the characterizing part, however, this feature is followed up only with the term "hypoid stage". The subject matter of claim 1 therefore does not meet the requirements of PCT Article 6.
- In claim 4, the use of the reference sign "B" does not appear to be appropriate (PCT Rule 6.2(b)).
- In claim 11, the phrase "outside of" is not clear in context with the other features (PCT Article 6).
- In claim 12, "sealing elements (19)" are mentioned. Since the reference sign 19 is given twice in figure 3, the claim is not clear, if not in contradiction to claim 11 (PCT Article 6).
- In claim 12, reference sign 3 is incorrect for the drive shaft; in claim 1 it is 14. The drive shaft is also given reference sign "3" on page 10, line 2, and on line 21 even "3.1", which otherwise cannot be found in the figures.
The same applies to 23 (output flange instead of drive flange; see, for example, page 10, line 29).

The application therefore fails to satisfy the criterion stipulated in PCT Rule 10.2.

- In figures 1 and 2, a distance is designated with the reference sign "d"; however, this reference sign is not supported by the claims or the description (PCT Rule

11.13(1)). The same applies to "L" in the description (for example, page 7, line 13, or page 7, line 29, or page 8, line 3).

- In figure 1, the arrow for reference sign 7 is not pointing to the corresponding machine element (cf., for example, reference sign 3).

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